Chemicals in Private Drinking Water Wells
Fact Sheet
Florida Department of Health, Bureau of Environmental Health

This fact sheet discusses possible health risks from exposure to low levels of lead typically found in drinking water wells.

Lead

What is lead?

Lead is a naturally occurring bluish-gray metal found in small amounts in the earth's crust. All parts of the environment contain lead. Much if it comes from human activities including burning fossil fuels, mining, and manufacturing.

The production of batteries, ammunition, metal products, and devices to shield X-rays all use lead.

How might exposure to lead in drinking water occur?

- Drinking water that contains lead
- Having a home with lead pipes or lead solder

What is the standard for lead in drinking water?

The Florida Department of Environmental Protection's drinking water standard for lead is 15 micrograms per liter of water (15 ug/L). There is no required sampling of private drinking water wells.

How can lead affect my health?

To protect health, drinking water standards are set at very low levels. Drinking water every day at or below the standard for your entire lifetime is unlikely to cause illness.

To set drinking water standards, scientists study reports of people exposed to chemicals at work. They also study reports of experiments with animals. From these reports, they determine a "no-effect level" or level that does not cause illness. Then, to be on the safe side, scientists typically set drinking water standard hundreds or thousands of times less than the "no-effect level." Therefore, drinking water with levels slightly above the standard for a short time does not significantly increase the risk of illness. The risk of illness, however, increases as the level of lead increases and the length of time you drink the water increases.

The type and severity of health effects associated with exposure to a particular chemical depends on a number of factors:

- How much of the chemical was someone exposed to each time?
- How long did the exposure last?
- How often did the exposure occur?
- What was the route of exposure (eating, drinking, or breathing)?

How chemical exposures may affect someone can range widely from one person to the next. A number of personal factors also determine health effects. These include:

- How old are they?
- What gender are they?
- Is the person generally healthy or do they already have other health problems?
- What are their health habits? (For instance, do they drink alcohol or smoke tobacco?)
- How likely are chemical exposures to effect someone, in general?

Drinking water with levels of lead well over the drinking water standard over an extended period can cause illness. Too much lead can damage your brain, kidneys, nervous system, and red blood cells. Young children and pregnant women are at greatest risk.

How likely is lead to cause cancer?

The ability of lead to cause cancer in humans is unknown. Based on animal studies, the U.S. Department of Health and Human Services has determined a reasonable expectation that lead acetate and lead phosphate may cause cancer in humans. The drinking water standard is set to protect against the risk of cancer.

Is there a medical test for lead exposures?

A blood test is available to measure the amount of lead in your blood and to estimate the amount of your exposure to lead. Blood tests commonly screen children for lead poisoning. X-rays can measure lead in teeth and bones, but this test remains less readily available. Medical treatment may be called for in children if the lead concentration in blood is higher than 45 micrograms per deciliter (45 ug/dL). No blood lead threshold for adverse health effects in children exists.

Is it safe to keep drinking water with lead in it?

Levels of lead less than the drinking water standard of 15 ug/L are not likely to cause illness. Drinking water with levels slightly above the drinking water standard for a short time does not significantly increase the risk of illness. However, because health risks increase as the levels of a chemical (or how long a person drinks it) increases, it is best to drink water that meets standards.

For additional health information, please call the Florida Department of Health at 850-245-4240 or visit us online at www.floridahealth.gov/environmental-health/drinking-water/Chemicals-HALs.html

For more information about the health effects from exposure to lead in different situations and at higher levels than those usually found in drinking water wells, please see the ATSDR ToxFAQs for lead at www.atsdr.cdc.gov/toxfaqs/tfacts13.pdf